

**CONTENT ADDRESSABLE MEMORY (CAM) DEVICES THAT UTILIZE
SEGMENTED MATCH LINES AND WORD LINES TO SUPPORT
PIPELINED SEARCH AND WRITE OPERATIONS AND
METHODS OF OPERATING SAME**

Abstract of the Disclosure

CAM devices include a segmented CAM array that is configured to support a long word search operation (e.g., x8N search) as a plurality of overlapping segment-to-segment search operations that are each performed across different rows within a group of rows in the CAM array and staggered in time relative to one another. To provide enhanced soft error immunity, these CAM devices may also include a CAM array having a row of lateral XY TCAM cells therein that are arranged in a repeating low-even, low-odd, high-even, high-odd sequence, where "low" and "high" represent the first and second halves of a CAM entry. Methods of operating a CAM device may include staggering the timing of overlapping segment-to-segment search operations across different rows within a CAM array using force-to-miss control signals to establish miss conditions on match lines of rows that are not to participate in a respective ones of the segment-to-segment search operations.

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